

In the claims:

1. (Currently Amended) A method of assigning agents of an automatic call distributor to incoming calls of a plurality of call types handled by the automatic call distributor, such method comprising the steps of:

determining a target occupancy matrix including a target occupancy for each agent of the agents of the automatic call distributor for each call type of the plurality of call types and where the total target occupancies among at least some of the agents are not equal;

in an overstaffed situation, processing a call of a first type of the types determined in the target occupancy matrix; and

assigning the processed call to an agent of the agents of the automatic call distributor with a largest relative difference between an actual occupancy of calls of the first type handled by the agent and the target occupancy of calls of the first type determined for the agent in the target occupancy matrix ~~and wherein, as opposed to creating semi-permanent groups of agents and queuing calls to an appropriate group, the automatic call distributor places the agents in a single pool and directs all calls to this pool; and~~

in an understaffed situation, when an agent of the agents becomes available, selecting a call from a queue of a work type of the plurality of work types having a largest relative difference between actual occupancy and target occupancy among the work types of the available agent; and

assigning the selected call to the available agent.

2. (Original) The method of assigning agents as in claim 1 further comprising generating the target matrix from permanent, semi-permanent and variable data.

3. (Original) The method of assigning agents as in claim 2 wherein the step of generating the target matrix from the permanent data further comprises defining a plurality of work types where each work type characterizes at least some of the incoming call types.

4. (Original) The method of assigning agents as in claim 3 wherein the step of generating the target matrix from the permanent data further comprises providing a list of agent skill types required for each work type of the incoming call types.

5. (Original) The method of assigning agents as in claim 4 wherein the step of generating the target matrix from the permanent data further comprises providing a minimum agent skill level required by each work type of the incoming call types.

6. (Original) The method of assigning agents as in claim 5 wherein the step of generating the target matrix from the semi-permanent data further comprises providing a skill level of each agent with respect to each skill type required by each work type of the incoming call types.

7. (Original) The method of assigning agents as in claim 6 wherein the variable data further comprises manually providing a target occupancy level for at least some agents of the target matrix.

8. (Original) The method of assigning agents as in claim 2 wherein the step of generating the target matrix further comprising randomly assigning work type occupancies to each agent of the plurality of agents within the target matrix.

9. (Original) The method of assigning agents as in claim 8 wherein the step of randomly assigning work type occupancies to each agent of the plurality of agents within the target matrix further comprises iteratively repairing the target matrix.

10. (Original) The method of assigning agents as in claim 9 wherein the step of iteratively repairing the target matrix further comprises sequentially selecting an agent and randomly selecting a work type.

11. (Original) The method of assigning agents as in claim 10 wherein the step of sequentially selecting an agent and randomly selecting a work type further comprises assigning a fractional occupancy of the agent to the randomly selected work type, thereby generating a new target matrix.

12. (Original) The method of assigning agents as in claim 11 wherein the step of sequentially selecting an agent and randomly selecting a work type further comprises

calculating a change in an objective function of the new target matrix.

13. (Original) The method of assigning agents as in claim 12 wherein the step of calculating a change in an objective function of the new target matrix further comprises adopting the new target matrix as the repaired matrix when the calculated change is less than zero.

14. (Currently Amended) Apparatus for assigning agents of an automatic call distributor to incoming calls of a plurality of call types handled by the automatic call distributor, such apparatus comprising:

means for determining a target occupancy matrix including a target occupancy for each agent of the agents of the automatic call distributor for each call type of the plurality of call types and where total ~~the target~~ occupancies among at least some of the agents are not equal;

means in the overstaffed situation for processing a call of a first type of the types determined in the target occupancy matrix; and

means for assigning the processed call to an agent of the agents of the automatic call distributor with a largest relative difference between an actual occupancy of calls of the first type handled by the agent and the target occupancy of calls of the first type determined for the agent in the target occupancy matrix ~~and wherein, as opposed to creating semi permanent groups of agents and queuing calls to an appropriate group, the automatic call~~

~~distributor places the agents in a single pool and directs all calls to this pool;~~

means in an understaffed situation, when an agent of the agents becomes available, for selecting a call from a queue of a work type of the plurality of work types having a largest relative difference between actual occupancy and target occupancy among the work types of the available agent; and

means for assigning the selected call to the available agent.

15. (Original) The apparatus for assigning agents as in claim 14 further comprising means for generating the target matrix from a plurality of permanent, semi-permanent and variable data.

16. (Original) The apparatus for assigning agents as in claim 15 wherein the means for generating the target matrix from the permanent data further comprises means for defining a plurality of work types where each work type characterizes at least some of the incoming call types.

17. (Original) The apparatus for assigning agents as in claim 16 wherein the means for generating further comprises means for providing a list of agent skill types required for each work type of the incoming call types.

18. (Original) The apparatus for assigning agents as in claim 17 wherein the means for generating further comprises

means for providing a minimum agent skill level required by each work type of the incoming call types.

19. (Original) The apparatus for assigning agents as in claim 18 wherein the means for generating further comprises means for providing a skill level of each agent with respect to each skill type required by each work type of the incoming call types.

20. (Original) The apparatus for assigning agents as in claim 19 wherein the means for generating further comprises means for manually providing a target occupancy level for at least some agents of the target matrix.

21. (Previously Presented) The apparatus for assigning agents as in claim 15 wherein the means for generating the target matrix further comprising means for randomly assigning work type occupancies to each agent of the plurality of agents within the target matrix.

22. (Original) The apparatus for assigning agents as in claim 21 wherein the means for randomly assigning work type occupancies to each agent of the plurality of agents within the target matrix further comprises means for iteratively repairing the target matrix.

23. (Original) The apparatus for assigning agents as in claim 22 wherein the means for iteratively repairing the

target matrix further comprises means for sequentially selecting an agent and randomly selecting a work type.

24. (Original) The apparatus for assigning agents as in claim 23 wherein the means for sequentially selecting an agent and randomly selecting a work type further comprises means for assigning a fractional occupancy of the agent to the randomly selected work type, thereby generating a new target matrix.

25. (Original) The apparatus for assigning agents as in claim 24 wherein the means for sequentially selecting an agent and randomly selecting a work type further comprises means for calculating a change in an objective function of the new target matrix.

26. (Original) The apparatus for assigning agents as in claim 25 wherein the means for calculating a change in an objective function of the new target matrix further comprises means for adopting the new target matrix as the repaired matrix when the calculated change is less than zero.

27. (Currently Amended) Apparatus for assigning agents of an automatic call distributor to incoming calls of a plurality of call types handled by the automatic call distributor, such apparatus comprising:

a matrix processor adapted to determine a target occupancy matrix including a target occupancy for each

agent of the agents of the automatic call distributor for each call type of the plurality of call types and where total the target occupancies among at some of the agents are not equal;

a call processor adapted to process a call of a first type of the types determined in the target occupancy matrix; and

a call distributor adapted to assign the call in an overstaffed situation to an agent of the agents of the automatic call distributor with a largest relative difference between an actual occupancy of calls of the first type handled by the agent and the target occupancy of calls of the first type determined for the agent in the target occupancy matrix ~~and wherein, as opposed to creating semi-permanent groups of agents and queuing calls to an appropriate group, the automatic call distributor places the agents in a single pool and directs all calls to this pool;~~

the call distributor, in an understaffed situation when an agent of the agents becomes available, being further adapted to select and assign a call to the available agent from a queue of a work type of the plurality of work types having a largest relative difference between actual occupancy and target occupancy among the work types of the available agent.

28. (Original) The apparatus for assigning agents as in claim 27 further comprising a plurality of permanent, semi-permanent and variable data.



29. (Original) The apparatus for assigning agents as in claim 28 wherein the permanent data further comprises a plurality of work types where each work type characterizes at least some of the incoming call types.

30. (Original) The apparatus for assigning agents as in claim 29 wherein the matrix processor further comprises a list of agent skill types required for each work type of the incoming call types.

31. (Original) The apparatus for assigning agents as in claim 30 wherein the matrix processor further comprises a minimum agent skill level required by each work type of the incoming call types.

32. (Original) The apparatus for assigning agents as in claim 31 wherein the matrix processor further comprises a skill level of each agent with respect to each skill type required by each work type of the incoming call types.

33. (Original) The apparatus for assigning agents as in claim 33 wherein the matrix processor further comprises a manually entered target occupancy level for at least some agents of the target matrix.

34. (Original) The method of assigning agents as in claim 33 wherein the matrix processor further comprising a selection processor adapted to randomly assign work type

occupancies to each agent of the plurality of agents within the target matrix.

35. (Original) The apparatus for assigning agents as in claim 34 wherein the selection processor further comprises a repair processor adapted to iteratively repair the target matrix.

36. (Previously Presented) The apparatus for assigning agents as in claim 35 wherein the repair processor further comprises an objective function processor adapted to calculate a change in an objective function of the new target matrix.

37. (Original) The apparatus for assigning agents as in claim 36 wherein the objective function processor further comprises a update processor adapted to adopt the new target matrix as the repaired matrix when the calculated change is less than zero.

38. (Currently Amended) A method of assigning a plurality of agents to incoming calls by an automatic call distributor, such method comprising the steps of:

determining a target matrix specifying a mix and proportion of call types to be handled by each agent of the plurality of agents and where ~~the mix and proportion~~ a total occupancy of call types handled among at least some of the agents are not equal;

in the overstaffed situation, receiving and assigning

calls based upon the mix and proportion of call types specified in the target matrix with agent selection based upon an actual occupancy of the target matrix by the agent and a largest relative difference between the actual occupancy and the target matrix ~~and wherein, as opposed to creating semi permanent groups of agents and queuing calls to an appropriate group, the automatic call distributor places the agents in a single pool and directs all calls to this pool;~~

in an understaffed situation, when an agent of the agents becomes available, selecting and assigning a call to the available agent from a queue of a work type of the plurality of work types having a largest relative difference between actual occupancy and target occupancy among the work types of the available agent.